

# AVIATION WEEK

JAN. 19, 1948

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1



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AVIATION WEEK, January 29, 1948

## THE AVIATION WEEK

**NO EASY WAY**—Any disappointment that is experienced in aviation circles over the report of the President's Air Policy Commission undoubtedly will stem from the document's re-affirmation of the long-held suspicion that there is no easy way out of aviation's present difficulties.

The report contains very little that has not previously been recommended, and in vain, by both government and private aviation representatives. It offers no promises, and no alternative to increased government expenditures which, through annual defense contracts, would help manufacturers and through higher mail payments, would tide the airlines over.

Aviation observers consequently feel that the report is important not so much in recommendations as in the source of those recommendations. The

report would tend to highlight re-consideration of the majority, subcommittee opinions of the members.

This appears to be the procedure followed by the Commission and could very well be responsible for the absence (with one possible exception) of any actual or spectacular suggestions.

While the report contains a number of shrewd observations on a variety of aviation situations, there is little searching analysis of the basic situation or some of the options as presented in the hearings and carried forward into the report.

This could be the result of lack of time. The Commission is one of the few government fact-finding bodies ever to meet its deadline. In fact, it submitted its document two days early.

There also is an absence of discussion of the long-range implications of some of the recommendations. The result is that the recommendations assume the substance, at least, of proposals for temporary emergency measures only.



Members of the President's Air Policy Commission stand by as Mr. Truman looks over their report. Left to right: Robert H. Hoyt, George E. Baker, John A. McCone, S. Fred Johnston (Executive Director), Clarence E. Brown, K. F. Ziegler and Arthur W. H. (From Air)

Commission was established by the President as his own fact-finding agency to weigh the requests of both official and non-official aviation interests, and to make recommendations "on a basis of scope and purpose that they will assist in solving old problems and in facing new ones."

This the Commission has done in detail. The President obviously is not committed to accept or reject the recommendations of the Commission. But, having asked the Commission to examine the situation, there cannot be for him any higher authority.

**GOOD REPORTING**—Possibly reflecting the pressure on the Commission of a seasoned publisher and on the staff of several experienced journalists, the Commission's document is in essence an excellent reporting job. The President's letter of appointment last July laid down the beat to be covered.

It was covered well and, consciously or unconsciously, the subsequent report takes much the form of a non-biased reporter's story on a technical subject following interviews with all qualified experts. In such a case the re-

**BATTLE CRY**—The one novel, and possibly unexpected, proposal of the Commission is for a Department of Civil Aviation and its resultant absorption of CAA, creation of an Air Safety Board and changes in CAB.

This proposal could be a battlecry for various groups and sponsor a legislative Donkeybrook.

Establishment of a Department of Civil Aviation probably would require legislation. Strongship and railroad interests in particular have been acting for an opportunity to push legislative amendments to the Civil Aeronautics Act. If that Act is ever opened up for amendments to authorize the Civil Aviation Department and an enlarged CAB, it would be difficult to prevent, in a Republican Congress, consideration of other amendments.

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## NEWS DIGEST

### DOMESTIC

Vice Admiral John D. Price was named Deputy Chief of Naval Operations for Air, succeeding Vice Admiral Arthur B. Rodden.

CAA, CAB and Eastern Airlines personnel were probing the crash of an Eastern Douglas DC-3 crash on final approach to Washington from New York. Five persons were killed and four others were seriously injured. The plane's two altimeters showed readings of 1200 and 3600 ft., both far wrong.

National Airlines expects to have its first Douglas DC-6 in operation before the end of January on the New York-Miami run.

President Truman awarded the Medal of Merit to two wartime members of the National Advisory Committee for Aeronautics for their contribution to U. S. aviation science during the war period. Dr. Cyril Wright has delayed his trip to Washington to receive the award pending an improvement in his health. Others honored were Dr. George W. Lewis, wartime NACA Director of Aeronautical Research; Dr. William F. Durand, wartime expert in jet propulsion studies; Dr. Jerome C. Hunsaker, present NACA Chairman; John F. Victory, NACA Executive Secretary; Dr. Lyman J. Briggs and Dr. George J. Mitchell, wartime Committee members; and Keith J. DeFrance, Edward R. Shapiro, and Henry J. Rea, NACA laboratory heads.

### FINANCIAL

Pittsburgh Engine and Airplane Corp. reports net income \$26,699 for six months ended May 31. This income includes the effect of a \$95,250 provision for contingencies, and is equal to 4 cents a share on 2,382,707 outstanding capital shares. Sales for the period were \$16,069,350.

Senate approved two measures last week which authorize a total of \$469,955,100 in new public works projects for the Army, Navy and Air Force. The measures were expected to receive speedy approval in the House.

### FOREIGN

Great Britain and Peru have concluded a bilateral air transport agreement covering services between Europe and South America and connecting Peru with various British colonies.

Peru's Economic Council has agreed to approve a recommendation to develop airmail services but has indicated a 30 percent increase in passenger and freight rates.



## Big year at Boeing

Out of Boeing's plants in 1947 came four new aircraft, all of major national importance.

First to be launched was the Boeing B-50 bomber, a heavy, mass powerful, longer hitting version of the famous B-29. The B-50 will form the backbone of the Air Force's long-range bombardment program.

Next came the Stratocruiser, most spacious, most comfortable and fastest aircraft in the class. Planned, like the B-50, by four 3500 horsepower engines, the four-deck Stratocruiser is the first true rapid transport of the post-war era.

Third of the new Boeing ships to fly was the Army's L-15 liaison plane.

Refined in design, the small aircraft is expressly built to provide the very best performance needed by the Army Ground Forces for observation, reconnaissance and liaison work.

Last of the quartet was the experimental X-47 jet bomber—monolithically fast—revolutionary in concept. It marks a forward stride in bomb-ment warfare at a significant time in the advent of the Boeing B-47, in 1948.

Each of these four planes is the result of years of work. And into each has gone the integrity of Boeing research, design and engineering that has become a byword: "If it's built by Boeing, it's bound to be good."

Boeing is building fleets of Stratocruisers for these forward-looking airlines.

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For the Army, the L-15 liaison plane.

**BOEING**  
STRATOCRUISER

## Air Power &amp; UMT

There is strong and bipartisan support for Sen. Taft's position that if \$2 billion a year is to be added to the national defense budget, it should be allocated to the air arm, primarily for accelerated research and development, instead of into a universal military training program, as proposed by the President. Democratic Sen. Thomas, former chairman of the Military Affairs Committee Armed Services Committee, can Rep. Ake Goff (R., Idaho), a veteran of both world wars and a member of the American Legion, is actively fighting before Congress publicly for UMT, maintaining that "national defense through air was essential to our weapons, industrial reserve, reserve of technically trained and proficient personnel, air by mass manpower."

## New Postal Rate Makers?

House Post Office Committee is expected to test language over postal rates and payments to members at the top of a separate rate-making body. The committee will open hearings shortly on legislation, introduced by Rep. Katherine St. George (R., N.Y.) setting up a three-member board in the Post Office Department which would submit recommendations to Congress annually on rates for various mail categories.

Each rate recommendation would be given to the Post Office as a recommendation, but it would have to be acted upon by Congress within 60 days after it was introduced. The House committee is also quickly drawing up a report recommending new rates and values of postage and covering Post Office deficits, including deficits in the annual revenue, estimated at approximately \$15 million for the 1947 fiscal year.

## Piston Engine's Future

The President's Air Policy Commission report took a hard line on the engine research policy, pointing out that if regarded abandonment of piston engine research is premature. NACA now has no piston engine research under way at its Cleveland engine research laboratory—devoted entirely to jets. The Commission predicted a long life for piston engines and the propeller in long-range bombers and transports. However, the report research proved NACA's accomplishments.

## Landis as Syndicate Writer?

Some Washington insiders say James M. Landis, ex-chairman of CAB, is considering writing a series of syndicated articles for newspapers on the general subject of public utility. If these reports are true, the matter would bring up another difficult public relations problem for the carrier.

## All Purpose Trainer

Meeting the challenges of those who fear economies from service unification is the Air Force's second similar proposal for a universal training device. This new "all purpose" plane would be capable of taking a student pilot all the way from his first flight to advanced combat training, eliminating the specialized work for primary, basic and advanced trainers and combat aircraft used for traditional training purposes. North American has developed such an airplane as its SN2N-1, designed,

## No Ward on ATC-NATS

Indications are that the ATC-NATS policy problem will not be finally settled for some time. Defense Secretary Forrester told the House Armed Services Committee last week that no final decision has been made yet and that he is still working on details of the plan. Indications are that some form of merger is in the air is presently reported here. One version would place all air transport under the Air Force but overall command in Army Air Corps. W. R. Rivers, NATS commander, who would report to Air Force chief of Staff.

NATS' official operations under has been the focal point in the Navy's case to retain its own as transport. If Navy retains NATS look for increased development all large flying boat two ports adding new, four-engine planes built both and other engine research results as they develop. Navy visualizing flying boat transport as a method of keeping current staff forces at sea safely while.

however, to a Navy modification. Indications are strong that the Navy is pressing this position up, leaving it available to the Air Force. What the Air Force does about it is seen as a test case of the flying general's agreement for unification as a post-governmental concern.

## Names in the CAB Ring

Dr. John B. Crane, transportation committee member, has named his Group, Malone (R., N.Y.) reportedly is in the running for appointment to the CAB vacancy caused by the departure of Clarence M. Young last fall. Another name mentioned in Evansburg papers, now on the staff of Harvard School of Business Administration, who recently directed a nationwide study of local transit operations.

## Secretary of Civil Air

Senators close to the Air Policy Commission describe the proposed reorganization of the civil aviation branches of the Department as designed to create a Secretary of Civil Aviation on a regular staff, administratively, with Secretaries of Air Force Navy and Army. Most opinion is to provide a reorganization of the "working staff" which civil aviation had been higher civilian status in the early days of World War II. Washington rumors that Congressman Bennett McMillan was partly responsible for the recommendation are discounted. It is claimed within the Commission that McMillan did not present any recommendations to the staff on this point.

## Weather Reports Hurt Airlines

Commercial broadcasts of flying weather, so-called weather forecasts or otherwise as in some news programs and air, are troubling the Air Transport Association. In the past broadcasts have stated that "poor" flying weather exists, "bad" weather prevails, or that "terrible conditions" exist. The undesirable phraseology has been brought to the attention of Weather Bureau officials, who, again, have agreed to advise the field personnel that reports must be carefully selected when being reported to the public. Purpose of the agreement is to maintain that the private pilot is able to obtain desired weather information and also to assure that the phraseology will not discourage passengers from riding the airlines.

Big Increases for Aviation Funds  
Asked by Truman in '49 Budget

Air Force, Naval Aviation, CAB, NACA and CAA all listed for 10 percent to 35 percent boosts in next fiscal year to accelerate civil and military aviation programs.

The President's 1949 fiscal year budget, introduced to the economy-led Republican Congress last week, encompasses substantially accelerated civil and military aviation programs.

At U. S. Air Force budget totaling \$1,716,435,000—\$1,399,675,000 cash and \$316,760,000 contract authorization. This is an approximately 25 percent increase over USAF's 1948-year appropriation of \$1,379,272,000—\$629,272,000 cash and \$749,999,000 contract authorization. The new budget of contracts entered into under the year's contract authorization.

A new contract budget of \$1,064,668,000—\$691,668,000 cash and \$373,000,000 contract authorization. This amounts to a 42 percent increase over the 1948-year appropriation of \$749,000,000—\$379,000,000 cash and \$370,000,000 contract authorization.

A \$457,573,000 appropriation for Civil Aeronautics Administration, which is a \$16,255,566, or 30 percent, increase over CAA's 1948-year allocation of \$179,317,434.

A \$5,674,000 appropriation for the Civil Aeronautics Board, a \$610,000, or 20 percent, increase over the board's 1948-year appropriation of \$1,049,930.

A \$48,000,000 appropriation for the National Advisory Committee for Aeronautics, a \$4,946,800 or 10 percent, increase over NACA's 1948-year cash and contract allocation of \$43,053,200.

A \$9,254,471 appropriation for the Army's Signal Corps for construction of airports communication radio systems—several under the current year appropriation of \$1,544,430 for the program. The President estimated that 74 percent of the proposed total budget of \$9,796,730,700 for the departments of Army, Navy, and Air Force is to support aviation activities only 46 percent to support ground and sea services.

USAF Program—The USAF budget encompasses a force of 55 combat groups and 17 separate squadrons, "will permit a higher level of maintenance and operations, with a considerable increase in aircraft procurement. The proposed fiscal budget will create most increase at its maximum strength, but also permit increased plane procurement.

Estimating a total availability of \$1,717,000,000 for obligations for aircraft procurement in the proposed USAF and civil aviation budgets, the President stated in his accompanying message: "Increased replacement of aircraft is essential in the fiscal year 1949 to support our air arm at the planned level. Wartime reserves of planes and parts are becoming depleted or about left." He estimated aircraft spending in 1948 fiscal year, under the proposed increase of 36

percent in present fiscal contract authorization for 1949.

Procurement—Based—USAF's obligations for aircraft procurement for the 1949 fiscal year are set at \$707 million, 50 percent (\$353.5 million) higher than current year obligations of \$474.5 million, and 184 percent (\$707 million) higher than 1947 fiscal year obligations of \$375 million.

Naval aviation's obligations schedule for 1949 fiscal year aircraft procurement calls for an even higher—48 percent—increase over the current year's obligations. Obligations for naval aviation procurement for the 1949 fiscal year are set at \$478 million, comparing with estimated obligations of \$324 million for the current year, and \$133 million for the 1947 fiscal year.

The leveling off of funds for military aviation research and development and the decrease in funds for USAF's research and development program proposed in the President's budget would be a surprise to aviation circles, looking to a steady acceleration of activity in that field holding the key to tomorrow's progress. It is anticipated, however, that the services will regard a sizable portion of their increased funds and contract authorizations for procurement as developmental contracts.

The \$75 million proposed for the Navy's accelerated research and devel-



VOUGHT PIRATE PASSES TESTS

Flight photo of Vought XP4U-1 Pirate jet fighter shows new wingtips with which it has been tested. New flight tests at Edwards, Md., tests are expected to begin close to the airplane on flight tests, proving handling in the mid-range. Recently flown, conducted largely at Mather Airfield, which is now closed, has been ordered as quickly by the Navy for service tests (Navy photo).



points to, investigation or otherwise.

**Industry AGC Report.**—Previous recommendations of the Air Coordinating Committee on aircraft noise by the General Accounting Office (GAO) are estimated, for a 15,000,000-sq-ft area of aircraft plant area and 10,000,000 sq ft of aircraft engine plant area, and a minimum noise of 45.00 general average intensity level. Report says that any future aircraft plant expansion should avoid further concentration in already highly congested industrial areas.

An internal procedure, production control should be given to the manufacturer who developed the original design, the Commission states. Elsewhere, wherever such a production order would extend his facilities the contracting agency should insist upon a subcontract part of the new contract, or equivalent, on item basis on a previous contract, to offset manufacturing. Such subcontract could involve parts or complete aircraft.

If phasing of the contract with that developing, the Commission says, such subcontracting in one producing area, the contracting service should place it elsewhere, but arrange with the developing companies to supply engineering service.

Planning to place one model of each basic type of aircraft in production in a major plant is an emergency in itself. The Commission should include possible plant drawings, operation details, bills of materials, work orders, and drawings of rigs, fixtures and special tooling, with contract revisions to keep all these items up to date.

Three steps deemed necessary to improve aircraft industrial planning are:

- **Preparation by the Military Establishment** of a mobilization budget assembly, showing appropriations and fiscal contract authorization necessary, if mobilization is required in that fiscal year.

- **Authorization of each budget assembly** by Congress, without appropriation.

- **Establishment of an Office of War Mobilization** with necessary contract offices for materials, production, machine tools, and other capital goods, ready for activation on declaration of a national emergency.

- **Immediate action by Congress** in event of emergency, to vote appropriations to activate the mobilization budget.

These steps it is believed will eliminate some of the "hazards and other uncertainties" of World War II.

out its program in their individual primes. Statistics from month-to-month would be required in the current low speed of research to top scientists because of its timely, short-term nature. In addition, the Commission suggests a revolving fund for the construction of special research facilities needed suddenly in the middle of a fiscal year.

- **Liberal Cost Plan.**—A plan for more liberal cost allocation policies in research contracts with the aircraft industry is needed by the report. This would provide an incentive for scientists per negotiation in those programs.

Such a policy would permit the inclusion of many items of general overhead costs, such as salaries, insurance, and legitimate costs which are now disallowed on research contracts.

It would also permit the inclusion of research costs on development and procurement contracts, which would be divided equally and which are, therefore, held to a minimum by the industry.

- **NACA Boost.**—The Commission strongly recommends a strengthening of the National Advisory Committee for Aeronautics in the principal research and engineering agency of the government.

Its broad and highly effective technical committee and administrative organization is equipped to provide expert guidance for the planning and coordination of research programs and the Commission urges other government agencies engaged in aeronautical research to seek NACA advice in initial stages of a new program. To increase NACA's effectiveness, additional funds for personnel, travel and other purposes in connection with research coordination are recommended.

The NACA commission should also be extended the growing field of minority research, in which Air Force, Bureau of Aeronautics, Army, Ordnance and numerous other agencies are heavily engaged, but without coordinated coordination to increase research productivity. The Commission feels that NACA should take the lead in the contracting and coordination of minority research work, which should be expanded to an equal extent in research completely within the available scientific personnel at the various research level in educational institutions.

The Commission urges, however, that research travel and travel cost be not revised under the guise of conservation or it will be much of its defined value.

- **Supersonic Turbulence.**—Commented that a dangerous shortage of transonic and supersonic wind tunnel research facilities exists, the Commission believes that NACA National Supersonic Research Center, now under construction by the Research and Development

Board, must be authorized and installed as quickly as possible. In addition, for NACA's Network program of "Transonic and Supersonic Wind Tunnel," the so-called "Unity Plan," which requires provision for 16 wind tunnel facilities for research, construction and operation under be achieved and completed without delay. The "Unity Plan" involves an increase in NACA research facilities to critical in the next three years power is being and should, after the exact date has not yet been decided. The facility would include a number of supersonic wind tunnels larger than any of those now in existence (including the NACA 6 ft by 8 ft Mach number 1.5 tunnel now nearing completion at the Cleveland laboratory).

- **Great Tornado.**—The recommended Air Force Air Engineering Development Center, a Super Wright field, also be located in the next three years to large power source. This facility includes a supersonic transonic and tunnel 80 ft by 40 ft (more than 51 TIMES as large as any now in existence) which would cost \$1-600,000 and require 500,000 kw of power for its operation. Commission advocates extension of the Unity Plan, quickly and

at whatever order determined by the Research and Development Board, headed by Dr. Vernon A. Bush.

Solution to the pressing problem of research personnel can be found by extending the university research program (adding the present 500,000 man research government military and aerospace) to laboratory housing and recruitment facilities for scientists and their families, solution of the various personnel selection policies and the management of research personnel in scientific studies at technical schools and the grant of specialized scientific careers within the services.

The Commission offers a number of suggestions concerning additional research projects and desirable changes in current programs including:

- **Helicopters.**—Under the direction of the NACA, contractors research and development of the helicopter should be given and all possible applications of the helicopter throughout the country.

- **Light-Thin Air.**—The Navy should continue the research and development of ultra-thin and ultralight aircraft for military and naval use.

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- **Power Plants.**—Research and development on gas turbine and rocket engines should be given priority, but the power engine should not be abandoned until it is potentially completely exhausted. Atomic energy, electronics and guided missiles were also cited.

## Santa Fe Skyway Quits

### Airflight Operations

Santa Fe Skyway, Inc., subsidiary of the Santa Fe Railway, has decided to abandon its expensive night-flight operations in the next future. The company has been operating between California and New York on a contract carrier since July, 1961. Equipment included three Dash 7's and a 747.

President J. R. Lake said the decision to cease operations was made as a result of the "obviously extremely difficult" of the Civil Aeronautics Board toward Santa Fe and after earlier action of the Board last month denied Santa Fe a letter of authorization which would have permitted it to fly as a contract carrier through section 282.5 of the Commerce Regulations pending CAB action on its request for a certificate of public convenience and necessity (AIA, News Wire, Dec. 29).

## Research Personnel, Fund Boost Urged by Air Policy Group

Larger role for NACA recommended by Presidential commission; lack of trained scientific personnel pointed out as biggest research bottleneck.

By ROBERT M. LARSEN

Increased levels of commitment in science, research, engineering, aeronautics, public aviation and space are recommended by the President's Air Policy Commission. While such an expanded program will require greatly increased appropriations, the Commission points out that a shortage of skilled scientific personnel is the major deterrent to such an expansion. Several solutions to the problem are offered.

The Commission favors the maintenance of the present governmental agency structure with scientific research being performed by the National Advisory Committee for Aeronautics and the development of aeronautics by the government, the Air Force and the Bureau of Aeronautics through procurement contracts with the aircraft industry. Because our national security is largely derived to the state of our technological knowledge, the Commission believes that the government should have control of research and development by the military. It feels

as first with the fact that 99 percent of government research and development funds are allocated to the military and believes that coordination of the large program (amounting to \$311,940,000 for the current fiscal year) can be achieved satisfactorily by the Research and Development Board within the National Military Establishment.

- **Overhead Budgets.**—The Commission recommends an evaluation of research budgeting practice by permitting research agencies to request and receive annual lump sums for research and development purposes which are not otherwise broken down into specific categories. In addition, these agencies should be authorized to spend the money in a flexible, contractual relationship to cover a five-year period, thereby relieving the long-term planning of special research projects.

These provisions would accommodate the need of the responsible defense scientific research by permitting an agency to redistribute funds through

the NACA commission. Should also be extended the growing field of minority research, in which Air Force, Bureau of Aeronautics, Army, Ordnance and numerous other agencies are heavily engaged, but without coordinated coordination to increase research productivity. The Commission feels that NACA should take the lead in the contracting and coordination of minority research work, which should be expanded to an equal extent in research completely within the available scientific personnel at the various research level in educational institutions.

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## Senate Group Stymies Gen. Kuter

President's choice for CAB chairman pigeonholed by Armed Services Committee.

Unopposed opportunity to the Department of Defense, Gen. Kuter, a CAI chairman and highest paid member of the Board developed in Congress last week when the Senate Armed Services Committee unanimously decided to pursue high speed enabling legislation proposed by President Truman.

In announcing his selection of Kuter, the President had said the Senate and House of Representatives the task of a bill authorizing appointment of the 12-year-old board as a member of CAB "without affecting its military status and personnel."

- **Proposed Bill.**—The proposed bill provided that Kuter would continue to serve his military post, and also would be paid \$15,000 monthly while serving on CAB. The Department of the Air Force would have been authorized for Kuter's salary by CAB appropriations.

Opposition to the President's choice was on two grounds. The Committee refused the White House it could not approve legislation which tended to encourage appointment of military personnel to civilian jobs, and 2. by the federal salary ceiling.

President Truman's promise to sac-

red James M. Larkin had received more endorsement in the Air transport industry. Commission was that Gen. Kuter, who is now a representative to the International Civil Aviation Organization, a completely capable of handling the new job and that his appointment would be highly acceptable since it was practical.

- **Fighter Sought.**—Gen. Kuter was

not the first choice as successor to Larkin. Success attempts were made to induce Thomas S. Fitcher, chairman of the President's Air Policy Commission, to take the post. Fitcher rejected it. Senator Griffin backed by the Commerce Dept., not also in line for the job at one time, but his opposition quickly developed. His line—and more without justification—was that President Truman would appoint a pilot who had no CAB experience could not be qualified to accept a \$148,000-a-year post.

Air Transport Association President Emory S. Low said Kuter as "the perfect choice." Low said he had seen Kuter in action during the international conference at Yalta and that he had been a very high opinion of the general's ability. Both State and Commerce Department officials were pleased by the Kuter selection. The general has served closely with the State Department in the past.

- **Walloo-Two Committee.**—Sen. Glen Taylor (D., Idaho), prominently mentioned as a running mate for Henry A. Wallace, declared he would oppose Kuter's appointment even if the general declined but of military background. "He is still a military man with the West Point complex," Taylor told Associated Press.

Kuter said in Montreal he will not resign from the Army to become chairman of the Civil Aeronautics Board.



KUTER (Photo Staff)







**DROP TEST RIG**

Turning 40 ft. high drop test rig Lockheed Aircraft uses to test the landing gear of the military Constitution and all the Navy Neptune patrol bomber. A rig of new design, the company claims it duplicates in short every respect actual landing conditions. Weir is not protected below the drop and the pressure is water variety of tests on most drop rig which are ready for oil testing. Weir is the shock absorbing quality of the landing gear struts.

## Donald Douglas, Jr., Moves Up in Company

Donald W. Douglas, Jr., has been appointed director of control engineering of the Douglas Aircraft Co., succeeding Karl F. Gebbe. Douglas will continue as director of the testing division in addition to his new duties.

Douglas joined the company in October, 1939, and for six months worked with the strength group of the engineering division. He was later transferred to the DC-3 project where he specialized in power plant installation. In 1941, he was appointed director of the testing division and supervised flight test operations on the SRD. Douglas, and other military types, type certification tests on the post-war DC-4 and DC-5 and qualification testing of the DC-55 and other aircraft under his direction.

In other personnel action:

At Boeing Aircraft Co., assistant Robert H. Sever, formerly chief of the design group on short project operations—primarily aircraft, has been promoted to chief of production division. In December 1940, Sever was project engineer for the new Boeing DC-4. He is now supervising flight tests. Project

plans are shown over various of the Boeing production division. He will be in charge of project engineers for the DC-4.

At General Electric, the assistant P. E. McNamee is the general manager of the Aircraft Department, the with senior project manager in administration and production matters. McNamee joined company in 1918 and is a member of the company's technical staff. He is in charge of the company's technical staff. He is in charge of the company's technical staff. He is in charge of the company's technical staff.

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## Air Associates Closes Three Branch Offices

Air Associates Inc. will close its branches at Atlanta, Kansas City, and Seattle, and concentrate activities at Evanston, Chicago, Dallas and Los Angeles, it is disclosed in the company's annual report. The Evanston branch, however, will be moved from Evanston to the city's new headquarters at 1100 N. Dearborn St. The Evanston branch, however, will be moved from Evanston to the city's new headquarters at 1100 N. Dearborn St. The Evanston branch, however, will be moved from Evanston to the city's new headquarters at 1100 N. Dearborn St.

Despite the general curtailment in the aircraft branch and maintenance programs, Air Associates reports that the volume of business in the year ending Sept. 30 was maintained at a higher level than in the previous year. Sales totaled \$5,663,519 compared with \$5,761,661 in the fiscal year ended Sept. 30, 1940. After application

of a one year lease under the amount of \$27,171, the net income for the fiscal year amounted to \$230,944. That result compares with a net profit for the previous year of \$302,685 after a tax credit of \$568,694.

The company's operating loss for the year, before application of the tax credit, amounted to \$553,035. A substantial portion of this amount (\$470,000) was attributable to the loss sustained in the development and production of a new type VIP transportation under government contract on a fixed price basis, and to the necessity for extensive large inventory write-downs on several overvalued lines of merchandise.

One quarterly dividend of \$2.50 per share and one of \$1.00 per share, aggregating \$3.50 per share or \$40,671.50 was paid during the year. In view of the unprofitable operating results disclosed during the second half of the year, and a provision in the basic loan agreement which limits payment of dividends (other than stock dividends), and other distribution of cash or property to shareholders is not profit accumulated subsequent to Nov. 30, 1940, the directors voted to omit further dividend payments.

Air Associates has undertaken a number of development projects for the government in the field of aviation and military equipment for the purpose of increasing its associate sales potential and ultimately its commercial activities through the possible award of production contracts in the probable future. The fiscal year ended Sept. 30, 1940, was closed and the company.

## BRIEFING PRODUCTION NEWS

**Republic Aviation Corp.** Employment is now slightly under 6,000, with an available capacity anticipated. P-44 production continues at a rate of one plane per day, with another 150 awaiting the end of the line.

**Bell Aircraft Corp.** has begun deliveries of its motorized wheel loader. Named the "Pyro Mouse" by the company, it has three wheels and a small motor and is reported to move 1,000 lb. of material. It is about 6 ft. long, 5 ft. wide and 5 ft. high.

**Boeing Helicopter Corp.** employment is at a peak of 1,600, with further increase planned. Company has expended more than 200 percent in such at the past several years. Production is now under way for the Navy on the HRP-1 Rescue, trainer, twin rotor transport helicopter.

**Solar Aircraft Co.** orders for the first six months of its current fiscal year, ending Dec. 31, 1947, totaled \$7,395,274, from which it realized profit of \$145,147. This indicates a satisfactory record for the full year on receipts for the entire preceding fiscal year amounted to \$31,410,569.

**Jack & Helita Precision Industries** has produced its one millionth precision high speed motor since turning this field in May, 1946. Output in 1947 totaled 885,046, an average 922,007 per month of 1946.

**Geo. Conshohut Co.** has purchased the Industrial Heating Division of Budd Co., and it will be operated by Budd's Toledo Division, which also builds equipment for industrial heat treating of metals.

**Boeing Instrument Co.** has established sales and service offices in Denver and Salt Lake City. Denver address is 480 Broadway, and Salt Lake office is at 457 Aikin Building, 351 West Second Street.

## DuPont Begins Direct Sales of Tetraethyl

While ending a long-standing agreement with Ethyl Corp. and beginning direct marketing to the oil refining industry of tetraethyl lead, DuPont will continue its intensive research on the synthetic lead process, the company says. The program includes stepped-up research on the whole combustion field as well as full technical, operating and advisory services to the refining industry.

The company has maintained for several years a petroleum elements laboratory at Decaturville Plant, N. J., which has studied lubrication and lead stabilizing problems. Large scale operations in a second laboratory, and a new center for the study of engine and lead performance, and their activities will be expanded still further.

Direct laboratories will be divided into two sections, knock-test and gross power requirements. These jobs will be under center for technical research to the refinery, and will offer to help oil companies that need added laboratory facilities for specific problems.

The company has been making tetraethyl lead compounds (produced through Ethyl) for 24 years and has been responsible for much of the development of equipment and synthetic "knock" process. With this synthetic "knock" process, it has produced, partly compound and fully equipped units at five and laboratories, and will train technical and engineering staffs.

Free trials will be made to the following: West Coast at Los Angeles, Gulf Coast at Houston, Tex., Mid-Continent Area at Tulsa, Okla.; Chicago District

at Chicago, and East Coast at Wilmington, Del. Ray H. Miller, formerly a vice president of the Wayne Refining Co., Tulsa, is sales director for tetraethyl addition with Ethyl M. Lansing is sales manager.

## Hoppi-Captar Stock Sale To Finance Production

Stockholders of Hoppi-Captar, Inc., Seattle, Wash., have authorized an application to the SEC for the registration of 300,000 shares of stock to be offered for sale to the public to finance construction of the company's ocean helicopter. The company has owned Coastal Goodwin Co. of Seattle for its underwater.

Price of the stock has not yet been determined. The company, capitalized at \$100,000, recently reduced the per value of its outstanding shares from \$2 to \$1.50 cents, reducing to one share for one of the old and having 400,000 shares in the treasury.

Original financing was intended to make possible the production and testing of three experimental models. These three models have been completed, one has undergone about 16 hours of flight tests and the other two are not beginning flight test, according to Elmore Peterson, president of the firm and co-owner of the Hoppi-Captar.

The two smaller models are slightly lighter than the original, and have a more powerful engine, 40 hp. as compared to 35. One has a rotor diameter of 264 ft. on the outer of 37 ft., as compared to 16 on the outer model.

The three models will make possible a much more extensive flight test program, Peterson said. Kenneth Jones, co-

owner with Central Helicopters of Seattle, has been named as a second test pilot, in work with Maurice Ramm, who has flown all previous tests.

## Bearing Engineering Firm

A new corporation known as Dale Bearing, Inc. has been located in New York to specialize in the engineering, application and sale of anti-friction bearings. The company will operate primarily as an engineering firm, offering an extensive installation of the products of several nationally known manufacturers.

President of the new company is Clayton A. Decker, a veteran of more than 30 years in the bearing field. William B. Ashland, another 30-year man, is vice president. Richard A. Lipton has been named as secretary and treasurer. Both Decker and Ashland have been associated with SKF Industries, Inc., in the New York area.

Dale Bearing will distribute ball and roller bearings and anti-friction products manufactured by SKF, Fafnir, Federal, Ingersoll, and Timken bearing companies and the Bearing Brass and Bronze Co.

## Landgraf Election

Stockholders of Landgraf Helicopter Co. have elected Paul Landgraf, James S. Ruckelshaus, and John N. Gledhill directors for the coming year. Ruckelshaus has been vice president since 1941. Landgraf has been president since the corporation was formed in 1941. Both will continue these positions during the coming year.

The new board members, Gledhill, a president of Children's Products Corporation of Glendale, Calif.



**NEW TRANSITIONAL TRAINER FOR CARRIER PILOTS**

FFP Bureau design copies developed by East Aviation, Inc., installation of placed of aerial flight. The 4500 lb. design is and is then pilot to thoroughly that transition from the trainer to

actual aircraft no longer presents difficulties. Added motion is provided by plane-like vibrations, engine noise, simulated clouds around the canopy. (Official U. S. Navy photograph)



SHEET NUMBER  
CLASSIFICATION  
SUB CLASSIFICATION

D-44

Power Plants

Performance

## Summary of Power Comparisons

Temperature and speed	Power output at 1000 rpm	Power output at 1500 rpm	Power output at 2000 rpm	Power output at 2500 rpm	Power output at 3000 rpm	Power output at 3500 rpm
Power output at 1000 rpm						
Power output at 1500 rpm						
Power output at 2000 rpm						
Power output at 2500 rpm						
Power output at 3000 rpm						
Power output at 3500 rpm						
Power output at 4000 rpm						
Power output at 4500 rpm						
Power output at 5000 rpm						
Power output at 5500 rpm						
Power output at 6000 rpm						
Power output at 6500 rpm						
Power output at 7000 rpm						
Power output at 7500 rpm						
Power output at 8000 rpm						
Power output at 8500 rpm						
Power output at 9000 rpm						
Power output at 9500 rpm						
Power output at 10000 rpm						

Continued, See Aviation News and The Wingspan Engineer

## Here's my New Year's resolution



If you manufacture exhaust systems, venturi cowls, flash holes, heat exchangers or jet engine burner assemblies, start 1948 right, the way—

Tell us under what conditions your equipment operates—what corrosive and abrasive conditions it has

to meet—what temperatures and pressures it must contain—what are the weight limitations imposed.

With facts like these to work from, our stainless steel specialists will gladly help you select the type of U-S-S Stainless that will best meet

your requirements. They'll show you, too, how these service-tested steels can be efficiently and economically applied to obtain optimum results.

We don't know of any better way to insure you a happier and more prosperous New Year.



## U-S-S STAINLESS STEEL

SHEETS STRIP PLATE LARS BARS PINS TUBES WIRE SPECIAL SECTIONS

### UNITED STATES STEEL

AMERICAN STEEL & WIRE COMPANY, Cleveland, Chicago & New York  
CARBIDE-ILLINOIS STEEL CORPORATION, Pittsburgh & Chicago • COLUMBIA STEEL COMPANY, San Francisco  
NATIONAL TUBE COMPANY, Pittsburgh • TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham  
UNITED STATES STEEL SUPPLY COMPANY, Worldwide Distributors • Certain local—UNITED STATES STEEL EXPORT COMPANY, New York

AVIATION WEEK, January 19, 1948



Fig. 1. Typical test with conventional aviation fuel dropped six feet from three corners. Foremost data are given on base of test platform.

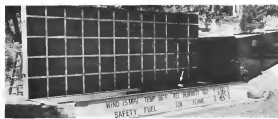


Fig. 2. Test of low volatility fuel under similar conditions produced no fire. Arrow shows fire. Clock reads time after crash.

## Plane Crash Fire Danger Studied by Fuel Engineers

By DR. W. E. KUHN  
(Manager, Technical & Research Div.,  
The Texaco Co.)

With the constant use of lighter transport aircraft, operating and safety engineers (flight and ground personnel) have become increasingly concerned about the flammability of present day aviation gasoline. One proposed method of increasing aircraft safety is the use of lower volatility fuels having decreased flammability characteristics.

While the use of low volatility fuels is not feasible on conventional carburetor engines, the current development of the cylinder injection engine may make the use of such fuels commercially practical.

**Test Apparatus—**The Texas Co. built a fire test rig on which these fuels could be exposed to various types of ignition under conditions which might be encountered in use during crash landings of aircraft. This apparatus, shown in the accompanying photographs, consisted of a 6 x 24 ft. concrete platform with a 9 x 24 ft. back wall mounted on two steel supports to simulate the extent of the fire occurring during the tests. Upon this fire testing beds were exposed by cranking in bellows and by spilling from open containers using various types of aviation fuels. Such aviation fuels consisted of an open flame from a highway flare, high tension spark, hot wire, and a hot pipe. Winds of varying velocities were obtained by a large blower.

**Test Results—**Tests were made on a large number of fuel types and conditions ranging up to blends of each volatility

A typical test with conventional aviation gasoline is shown in Fig. 1 when two oxygenated bottles of the fuel were cracked six feet from the base. At these same conditions no fire occurred (Fig. 2) with a fuel of 100-400 deg. F. boiling range (Standard 100 octane aviation gasoline is rated between 115-310 deg. F. boiling point). Even when the flame occurred in three to five feet from the crash point no fire occurred with the low volatility (100-400 deg. F.) fuel although at the latter condition a short spray flash is sometimes observed. In this condition a fire was judged to have occurred only if the fuel on the base ignited and the flames persisted for a minimum period of 14 sec.

When two oxygenated bottles of fuel were cracked six feet from the base at eight foot height, the occurrence of fire for any given fuel was dependent not only upon the distance from the crash point to the flame but also upon the ambient temperature.

**Variable Spilled—**The test run of different sample runs were made to determine effects on relative flammability. It was noted from the results that no flammability occurred if evaporated fuel samples either larger or smaller than the two pails were spilled for testing.

**Effect of other distance or wind velocity is relatively minor for flame duration in the range of one to five feet.** At these conditions ignition appears to result from spray consisting the flame. At the eight foot flame distance, vapor flash ignition occurs for five runs made with wind velocities up to approximately 10 mph. Above that velocity

spiral flash becomes the major cause of ignition for five runs. In this spray flash region, fuel volatility has to be considerably reduced in order to eliminate fire. At 16 ft., no spray ignition occurred, possibly due to the fact that the wind velocities available might have been insufficient to obtain such effect. Besides being cracked in bottles, samples were also spilled from two five-gallon cans at various distances from the base. The throat openings of each can were 14 x 14 in. Random volatility tests in such tests were tested at winds of 15 mph for spilling at platform level and at a two foot height. It was indicated that lower volatility fuels are required to eliminate fire when spilled at the two-foot height than for either of the other two exposure conditions (leveling, and spilling from platform level).

**Reaction of pooled fuels was also studied.** The tests were made periodically at 15 and 30 deg. below ambient temperature. Results indicated that apparently the pooling, at least within the range tested, had no appreciable effect upon the baseline volatility for the occurrence of fire.

**Wetted Platform Conditions—**Tests conducted with samples exposed on the concrete test stage when it was wet or filled with water gave the same baseline volatility in which the base was dry. When the platform was filled with snow, fuels were less likely to ignite by a degree equivalent to lowering the baseline volatility curve by approximately 60 deg. F. When tests were conducted at the rear, fuels were more likely to

ignite by a degree equivalent to raising the baseline volatility curve by approximately 25 deg. F. It is interesting to note that the addition of light blending components such as paraffins, butanes, and pentanes increased the tendency of a fuel to ignite to a greater extent than would be predicted from the change in American Society for Testing Materials 10 percent point.

Fuel type also has some effect as is illustrated in Fig. 3 which depicts the differences in baseline volatility between the different fuel types at the same flame distance and of relatively small exposure.

Tests were conducted on fuels having substantially equal 10 percent ASTM points but with both wide and narrow boiling ranges. For each fuel, the baseline volatility could be predicted from the 10 percent point since the difference in boiling range did not have any effect that was not entirely reflected by the ASTM 10 percent point.

**Ignition Source Effect—**The method

Although fuel ignition decreases with lowered volatility, exposure condition is ultimate factor.

samples were also exposed to a hot spark and a hot wire. Results for tests conducted with 15 mph wind under these conditions are shown in Fig. 4 along with the reference curve for flame tests. Reference to this chart indicates that sparks with other a flame or hot wire spark appear to be substantially similar.

With a hot wire spark source only, the fuels of the highest volatility were ignited and burned. Even at these conditions, fire occurred only at distances between the crash point and hot wire where ignition was by vapor flash with no spray to impinge upon the hot wire and cool it rapidly.

Controlled samples were also exposed to an ignition source consisting of a hot pipe. Tests indicated that with a 5-amp wire, spontaneous ignition occurred only when the liquid contacted sufficiently close to splash on the heated pipe surface. An interesting phenomenon was observed during these tests—spontaneous ignition at (100 point) being relatively low volatility, ignited at a lower hot-pipe than temperature than either

the 100-400 deg. F. fuel or conventional aviation gasoline. Such order is reverse to that noted with flame, hot spark, or hot wire sparks.

**Summary—**Most of the results of this test work to date can be summed up in Fig. 5, giving baseline volatility for the occurrence or non-occurrence of fire for different types of exposure, exposure sources, and wind velocities. Each data indicates that samples spilled at a 2-ft. height in 15 mph wind with flame ignition are most likely to burn. Therefore, the baseline volatility is the critical one and establishes the highest volatility fuels which can be used without the occurrence of fire under these test conditions.

Throughout the study the volatility of the fuel and the conditions of its exposure to ignition sources were major influences in determining whether or not fire occurred. The results have shown that volatility factors have calculated and that tendency to ignite in their volatility is dependent until a minimum is reached depending upon the conditions of exposure.



# Evaluation of Aircraft Pneumatics Indicates Commercial Applications

Though far from being perfected, experience with pneumatic controls on Convair's X31-46 points way to benefits for airline and lightplane use.

BY SCHOLEY HANES

Experience is mounting that in the immediate future pneumatic landing gear and flap control systems may offer considerable savings, especially the removal of hydraulic weight, weight, safety, and equipment costs.

But as in the past, with other development, the problem is being done by and for the armed services and commercial applications will have to come later.

**Pneumatic Applications**—However, military research on pneumatic control systems has advanced to a convincing state of practical applications, and to the point where safety and maintenance of these aircraft and even small plane builders, are considering the possibilities.

At least one military jet bomber, the Convair X31-46, now is flying with pneumatic controls, wing leading gear, landing gear doors, and brakes. And a number of accessory mechanisms have been given military contracts for the production of pneumatic systems components.

**Advantages of Pneumatics**—No less than eight major advantages of the pneumatic system are listed by Howard E. Scherz and Henry E. Gering, Convair pneumatic authorities.

• Weight, less maintenance required, and less than any other system so far developed.

• Greater changing of compressed air containers before flight eliminates power down upon engine at takeoff and requires minimum amount of power in flight to recharge and maintain pneumatic pressure.

• The system changing sealless—air-seals are not used.

• The pneumatic system is devoid of all the hazards of hydraulic and electrical systems.

• System is clean.

• It is operationally satisfactory in that it is not affected by extremes of temperature, offers small moving lines, does not require pressure losses from line friction, and due to air compressibility permits no serious surge pressure shock wave problems.

• Air compressibility provides cushioned shock of cylinder pistons moving at high velocity.

• Because some velocities can be achieved when air storage pressure is twice that of the operating pressure, moving components of the system can be designed for operational velocities of impact.

• Details of X31-46 installation—Indicates that while future commercial aircraft may expect pneumatic systems to gain hold, at this time, the Convair's use of the X31-46 installation.

Weight savings are pronounced—averaging of 180 lb. over a comparable hydraulic system to meet gear and loads door opening specifications, will over 600 lb. over a comparable electric system. Weight gain for the X31-46 pneumatic system is 635 lb. A comparable hydraulic system would have weighed 1254 lb. For a comparable electric system, the aircraft alone would have weighed 1,292 lb.

Freedom from requiring an auxiliary operating power from upon the engine's engine during critical takeoff and landing periods is emphasized for the X31-46 installation, and its designers at North American Wings that during flight the system air pressure bottles are recharged in 12 min. by an engine driven compressor during only 25 engine hp. In the X31-46, two electrically driven Weathering compressors are installed, one of them a standby unit, and are given driven respectively by engines 1 and 3.

Contrary to expectations of other pneumatic system research groups, Convair reports that the compressors have given no trouble from overheating, and have performed satisfactorily since their installation after the sixth flight of the engine. During the sixth test in flight, pending production of the engine down compressor, recharging of the system had been accomplished by independent electric-driven compressor.

Maintenance problems, as well as weight, are reduced by the system's sealless no return delivery of compressed air to terminal points, and by the use of the X31-46 of delivery, but having a maximum outside diameter as controlled with line size of up to 1/4 in. outside diameter required for a comparable 3000 psi hydraulic system.

The X31-46 system employs a storage

pressure of approximately 1700 psi. Both basic components of initial cost and maintenance, the pneumatic system should be extremely attractive to potential commercial users.

• **Benefits**—Convair's initial experience for such a system can be listed under seven equipment headings. Air storage bottles, compressors, regulators to release storage pressure to regulated operating pressure, relief valves, to prevent the system from rupture by static pressure in emergency action of pressure regulators, selector valves, actuating units, other basic motion cylinders, and safety relief and drain valves, and bleed valves.

Although commercial requirements for distribution would not be as severe, the gear and loads door opening specifications that the Convair jet bomber offers a display of the extreme speed of action that can be imparted upon a pneumatic system. Recharge of the 91,000-lb. plane's landing gear in accomplished in 4 sec. Doors by doors are opened or closed in 1 sec.

• **Design Problems**—Although the Convair installation is considered by plant engineers to be entirely practical, its development was not without the encountering of several design problems.

At the time of the war it was quite evident that American understanding of aircraft pneumatics was considerably behind that of Germany, and most research engineers acknowledged the fact that little research was going to meet pneumatic systems.

One said: "We apparently were more interested in conquering Germany than in solving the V-2 data, allowing Russia to work out the pneumatic control system. The result was that when we approached development of a pneumatic system of our own, we found that not a single Convair installation had been adopted, and brought to the United States for reference and study."

If this is true, it would appear inevitable that our own initial development would present a variety of problems.

Convair engineers found, for example, that selected controlled selector valves had a tendency to set up and stick, and asked the problem by using check valve cylinders, or "split" of the surface tapered inletting paper and slide, or selector unit. Several designs of pressure regulation were required before satisfactory operation of this important unit could be obtained. Properly designed use of an air-blast selector mechanism was necessary. Bleed valve trouble displayed a serious lack of vendor experience in aircraft pneumatics, and finally an improvement in Convair's use of "split" ball plate valves, which have proved highly satisfactory.

It is interesting to note that the theoretical "no-leakage" drawback cited against pneumatic systems was found to be of no consequence in the X31-46. After three months of operation, the entire system (27,000 sq. in.) was drained, and only a cup of water and oil emulsion remained.

No effect is made by Convair engineers to indicate that the pneumatic system has been "perfected." They note that regulation, valves, weighting mechanisms, and lubricated seals between pistons and cylinder walls still are open to research investigation and improvement.

However, they believe first experience gained to date with the X31-46 establishes the promise of the pneumatic system for future aircraft, and they anticipate the extension of its application to flap, surface control, and steering operations. They suggest, too, the employment of pneumatic starters for jet engines, pneumatic emergency brake, and pilot seat systems in subsonic aircraft, and windblast cleaning in opening the windshield with fluid air jet power generated from an air-driven jet pump of the venton type.

## Water Turbos Power French Wind Tunnel

Model 44-1, flow to 10,000 cfm, jet also recommended.

Powered by two 118,000-hp Pelton water turbines fed by a 2,375 ft fall of water, a large model wind tunnel, now under long assembly at the Alpiques Valley site of Avonnes, France—France a 46-ft-long test chamber section approximately 35 ft in diameter carrying over 274 in 24 ft in diameter of air flow.

Test length of the air tunnel will be about 1,250 ft, and weight of the installation will approximate 3,000 tons. Potential of developing a maximum speed value of Mach 1.0 will decrease to about 6,000 ft/min with water than half the diameter of the test section. And jet engines up to an equivalent of 10,000 hp will be recommended.

From a 70-ft diameter transverse flow chamber in the wind, a short convergent contraction brings the air flow down to the section of the test section. This convergent space has been verified by Schlichting's method of calculations. Calculations show a slight over-speed of two percent at the exit, which will probably have the beneficial effect of reducing the friction of the outer air layer. (Continued page 28)

### ASSEMBLY LINE PRODUCED VALVES

#### INDIVIDUALLY-ENGINEERED FOR THE CONVAIR LINER



Soon to be seen on the world's leading airlines, the new Convair Liners are becoming among premier aircraft transports. Naturally, their super 300-mile-per-hour engines are equipped with Whittaker Model Opened Shut-Off Valves. Controlling the vital fuel system, these valves have a special valve seat design to show position of valve gap. This individual engineering of field-proven designs, combined with modern, assembly-line manufacturing processes make Whittaker valves the leading choice among the leaders in the aircraft industry.



DESIGN FEATURES OF WHITTAKER MOTOR-OPERATED VALVES

**POWER PACK**—Compressed air from tank fed by a 2,375 ft fall of water, a large model wind tunnel, now under long assembly at the Alpiques Valley site of Avonnes, France—France a 46-ft-long test chamber section approximately 35 ft in diameter carrying over 274 in 24 ft in diameter of air flow.

**VALVE ORIENTER**—Directs flow of air to the valve seat, which is held open by a spring. When the valve is closed, the spring force is released, and the valve seat is closed.

**FLUID SEAL**—Elastic rubber seal and spring mechanism, which holds the valve seat open when the valve is closed.

Individually engineered design—direct operation—better operation—lower maintenance. These are the features you get with Whittaker's specialized aircraft valves. For Whittaker engine power valves design to meet your specific requirements. Write E. WHITTAKER CO., LTD., 215 St. Louis Ave., Los Angeles 88, California. Export representatives—ALCO ENGINEERING INC., Roswell, Field, Mansfield, New York.

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# Here's how...

## A PROBLEM WAS SOLVED... A NEW DESIGN WAS BORN



CONVAIR 580—world's largest turboprop aircraft built in the U.S.



### A force of 5 pounds steers this 133 ton Giant

One hundred and thirty three tons is a lot of weight to maneuver on the ground. When Convair's Value built this, the world's largest box plane, Adair Engineers were concerned on the design of a hydraulic control system for steering the huge nose wheel. Of course, this job is executed completely in flight. Therefore, they needed a device to help to get the power applied. The Adair type A hydraulic steering control system was the answer. Installed as a pilot control, the type A operates a 4-way air source valve which controls the pressure by hand or even when it is automatically from the gear nose wheel. A force of only five pounds at the pilot control is all that is required to guide the giant when it's "on down."



Adair type A hydraulic steering control system demands automatic hydraulic system. Besides, it consists of a closed circuit of valves, pumps, and a hydraulic fluid. At both ends of this piping are pistons, so designed that the pressure applied on the fluid by one piston causes the other piston to be moved. A compressor continuously circulates hydraulic fluid to insure constant pressure changes.

The Adair type A is a self contained hydraulic system. It is adaptable to various engine controls, such as manual engine controls, poppet, feathering, cold flap applications, engine air control, manifold control and more others.

Write today for further information on this Adair hydraulic equipment or be advised to visit us personally. General catalog and price quote. Address: ADAIL PRECISION PRODUCTS CORP., 10321 Van Dyke St., Berkeley, Calif.



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An auxiliary seat between the seat of the transposition chamber and the entrance to the convergent nozzle will allow for evacuation of air to the atmosphere.

Accessibility to nozzle will be obtained by transferring the air passing through the nozzle to the air below the nozzle.

Beyond the test section is a defuser with initial opening angle of 5 deg which widens to 7 deg for most of the length of the defuser.

Following this is an elbow which turns the air 90 deg, by 12 hollow fins fixed with adjustable flaps. The flow has an average width of about 12 ft and is 514 ft high.

Approaching the two fans which propel the air, the nozzle's diameter is reduced to about 49 ft (the diameter) to convert the outer layer. The fan-propelled flow is 5 ft apart—low, upper, 16 and 12 inches, and enters in opposite directions to reduce the flow, making the need for a fixed defuser.

The maximum flow speed is to be 250 mph. Beyond the fan installation is a second elbow.

The Pitot static turbine, located outside of the tunnel proper and located at opposite ends of the fan installation, are connected to the fans by long transmission members passing through the elbow.

Downstream from the second elbow is a small defuser section preceding the air admission apparatus composed of two central cylinders with adjustable flaps. After this section, a 217-ft-long defuser enables sufficient recuperation of kinetic energy. Following this defuser section are two other 90-deg elbow bends containing 20 ft apart 78 ft high, bringing the current back to the transposition chamber.

Tunnel construction comprises welded steel tubing, varying in thickness from 3 1/2 to 4 1/2 in., bonded by sand rings spaced about 10 ft apart and section insulator rings. No longitudinal stiffeners are used, and only the main rings rest on the ground.

Final points of the tunnel consist of the test section, the fan group and the defuser.

Scale on the measuring conveyor belt north the test chamber is to be set to allow for drag of about 4.4 tons and a thrust of approximately 38 tons.

Scheduled for completion early in '91, and in service in 1991, the tunnel will be operated by France's government's aerodynamic research bureau—Office National d'Etudes et de Recherches Aéronautiques.

It is expected that the present installation, but after launch is completed for the same size—can with a speed of M 2, the second with M 3.

## NEW AVIATION PRODUCTS

### Hot Water at Phenoxide

For quick servicing of commercial aircraft with hot water, new hot water tank made by International Diesel Electric Co., 13-62 46th Ave., Long Island City, N.Y., carries 120 gal with temperature held at 180 F., delivering 15 to 20 gpm with hand-operated rotary pump. Vehicle is trailer type with front and rear couplings, has welded all steel chassis mounted on double spring shock absorbers with air-line-type wheels. Stainless steel tank is arranged with ball float to keep sewage level in motion and carries a 24-in., 115-w, single phase, 60-hz motor. The motor has two eye-bolts on front for hoisting with two eye-bolts on rear. Cover provides easy access for air.



spection or cleaning. Servicing tank and pump compartment is 1-in. U.S. Rubber cellular rubber insulation, is pre-welded to water.

### Fire-Resistant Paneling

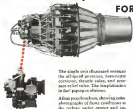
Introduced to reduce aviation fire hazards, new fire-resistant paneling, designated as Fireproof and listed in other portions to Bureau of Aeronautics, 1500-22d St. Ave., is product of Shurelec Corp., Fort Jervis, N.Y. Panel is built of 1/2-in. "Strut" cellular cellulose acetate plastic sandwiched between carbon steel sheets. It's claimed that in official tests, paneling withstood applied heat in excess of 2,300 F. for over 30 min (according GMA requirements). Panels also maintain against noise.

### For "Tight" Installations

Specialty designed for hard-to-get adjustments in close jobs on sparkplugs, carburetors, injectors, and valves is new needle combustion wrench set made by Nelson Mfg. Corp., 12 Glenwood Ave., Buffalo, N.Y. Fabricated of chrome-nickel, with special finish, sets have open end and 32-pawl box heads in sizes 1/4 x 3/8, 3/8 x 1/2, 1/2 x 3/4, 3/4 x 1, 1 x 1 1/4, 1 1/4 x 1 1/2, 1 1/2 x 2, 2 x 2 1/2, 2 1/2 x 3, 3 x 3 1/2, 3 1/2 x 4, 4 x 4 1/2, 4 1/2 x 5, 5 x 5 1/2, 5 1/2 x 6, 6 x 6 1/2, 6 1/2 x 7, 7 x 7 1/2, 7 1/2 x 8, 8 x 8 1/2, 8 1/2 x 9, 9 x 9 1/2, 9 1/2 x 10, 10 x 10 1/2, 10 1/2 x 11, 11 x 11 1/2, 11 1/2 x 12, 12 x 12 1/2, 12 1/2 x 13, 13 x 13 1/2, 13 1/2 x 14, 14 x 14 1/2, 14 1/2 x 15, 15 x 15 1/2, 15 1/2 x 16, 16 x 16 1/2, 16 1/2 x 17, 17 x 17 1/2, 17 1/2 x 18, 18 x 18 1/2, 18 1/2 x 19, 19 x 19 1/2, 19 1/2 x 20, 20 x 20 1/2, 20 1/2 x 21, 21 x 21 1/2, 21 1/2 x 22, 22 x 22 1/2, 22 1/2 x 23, 23 x 23 1/2, 23 1/2 x 24, 24 x 24 1/2, 24 1/2 x 25, 25 x 25 1/2, 25 1/2 x 26, 26 x 26 1/2, 26 1/2 x 27, 27 x 27 1/2, 27 1/2 x 28, 28 x 28 1/2, 28 1/2 x 29, 29 x 29 1/2, 29 1/2 x 30, 30 x 30 1/2, 30 1/2 x 31, 31 x 31 1/2, 31 1/2 x 32, 32 x 32 1/2, 32 1/2 x 33, 33 x 33 1/2, 33 1/2 x 34, 34 x 34 1/2, 34 1/2 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## with Speed-Density Fuel Control FOR JET ENGINES



The single unit illustrated controls the all-speed operation, intermediate operation, throttle valve, and pressure ratio valve. The simplification in fuel piping is obvious.

A few photographs, showing cross-sections of these controls as the carburetor valve opens and the pressure ratio valve, with its own pressure ratio valve, are properly regulated in operation.

In the same way Bendix' research has so often made aviation history—including the introduction of the four-cylinder engine, the first piston engine—the new Bendix Speed-Density Fuel Control revolutionizes the fuel delivery of jet engines. Existing Bendix-Bronberg practices, the Speed-Density Control accomplishes all of the following with a simple, clean action, and no series delays.

- inherent temperature limitation by fuel-air ratio control,
- sensitive, accurate, all-speed response
- quick throttle burst permitted without over-temperature or blowout.
- no die-out or deceleration.
- compensation for air temperature, rain, and altitude.
- prompt and "cushion" starting.
- no disturbance from maneuvers, or "pull-outs."

BENDIX PRODUCTS DIVISION of  
SOUTH BEND, IN, INDIANA



## SALES & SERVICE

### Stall Approach Flight Tests Show Need for Indicator Installation

National Research Council report, by Prof. P. J. Rulon of Harvard, says even 5,000-hr. instructors are not immune to stalling when flying an unfamiliar plane.

Many pilots who heard that they can detect an approaching stall condition by the "rustle of their pants" are taking both their attitudes and themselves, find says of a series of flight tests with 254 student pilots, private pilots, flight instructors and commercial pilots, have indicated.

At a study, the Committee of Aviation Psychology of the National Research Council, for whom the tests were conducted, has recommended emergency installation of stall warning indicators on all private airplanes.

► No Conception Seen—CAA's Dr. Dean Brinham, research assistant to Administrator T. P. Wright, and member of the committee, doesn't anticipate any immediate emergency requirement for the indicators, but believes that eventually they will be on virtually all air planes that aren't designed to be stall proof. He thinks that the trend toward installation of stall indicators in aircraft instruments on planes, which is being started by at least two manufacturers of personal planes, probably will spread within a reasonable time to a point where most new planes coming out will have stall indicators in standard equipment.

Indicators are that even some jet aircraft CAA inspectors in the field, who have glided across obstacles to the installation of the stall indicators in airplanes in quantity, are now beginning to see the light due to telephone calls and telegrams sent out by Washington to the regional offices (See leading column).

► Test Details—The flight tests were made with Side Flight stall warning indicators installed so that they indicated incipient stalls to a check pilot riding with the pilot who was being tested. Test details are given in a 174 page report, "A Study of the Accuracy of Recognition of the Incipient Stall in Familiar and Unfamiliar Planes," by Prof. P. J. Rulon of Harvard University, a commercial pilot. Prof. Rulon conducted the tests as an NRC project at the Educational Research Corp., Con-

necticut, with funds provided by CAA.

Aircraft Champion 65-hp. trainers were used in the standard planes for the test conducted at three airports: Bedford Field, Mass., East Coast Aviation Corp.; James Henson, operations manager; Philip Scarpas, chief pilot; Dr. Leo Lieberman, project supervisor.

Concord Airport, Newville, Tenn.; Capitol Airways, Mock H. B. Bower, operations manager; Frank Williams, chief pilot; Post. Stanford C. Enck, of Vanderbilt University, project supervisor.

Wichita Co. Airport, New York; North American Aircraft Corp.; Robert W. Callaway, airport manager; Walter J. O'Neill, chief pilot; Prof. Robert T. Ross, Jr., of Fordham University, project supervisor.

Each test airplane was equipped with five views in the leading edge of the left wing, similar to those used in the standard Side Flight stall warning indicators. The views were installed at different angles so that they gave a series of warnings as the plane approached the stall. The indicators were connected to a chip board held by the check pilot, which had five lights, one for each view. As each pilot was tested he was instructed to fly the plane as close to a stall as he could without stalling, while the number of lights on the chip board showed the position of his flying.

► Unfamiliar Planes—Following the tests on the "familiar" airplane, comparison tests were made with 119 of the same pilots in an "unfamiliar" plane of the same general type, a Taylorcraft 1-121 biplane plane, with light and stall characteristics markedly different from those of the trainers.

Differences noted between the two planes in the report included, slightly more divided air stream wings. The biplane was equipped for maximum flight,



AEROBATICS AT MIAMI

Spending the aerobatics day at the 10th Miami All American Air Meet, held recently, "Bee" Howard, winner of the first prize, is shown making a ribbon with the wing of his "Kaiser" biplane during the opening day program. (From A-1)





# "The fate of the world sits on this rug"

—JOHN L. LEWIS

## I

**NOTE:** Paste this editorial in your hat. Re-read it as you start to slither the next time John L. Lewis rubs off the nation's coal supply.

"Labor monopoly" will mean much more to you than that if you are warned enough you will get after your Congressmen to do his part now—before the shivering starts.

\* \* \*

### "The fate of the world sits on this rug."

The men on the rug John L. Lewis, President of the United Mine Workers, who made the remark, Benjamin Fairless, President, United States Steel Corporation, George M. Humphrey, Chairman, Pittsburgh Consolidation Coal Company, Elmer M. Moses, President, M. C. Frick Coke Company, Charles O'Neill, President, United Eastern Coal Sales Corporation, the late John O'Leary, International Vice President of the United Mine Workers, and John Cowan, President, District No. 6 United Mine Workers.

The place: Room 800, Carlton Hotel, Washington, D. C.

The time: Last July during the "negotiation" of a new coal contract.

The outcome: Another whopping increase in wages and the price of coal, another hike in the cost of living, and a "centrist" which heads the United Mine Workers only as long as they are "willing and able to work."

Mr. Lewis was right. The fate of the world did sit on the rug. In fact, it sat at Mr. Lewis' feet, for, as this editorial will explain and as the outcome shows, his power over coal is absolute.

Without coal modern industrial civilization collapses. Without Mr. Lewis' sweet coal can not be mined. He has the mines and, in the years 1945-46, the world at his mercy.

The Taft-Hartley Act, good as it is, does nothing to check this kind of monopoly.

**The Taft-Hartley Act fails to protect the public in many major particulars.**

Here are some of them.

1. Labor monopoly is promoted and protected by its continued exemption from the federal antitrust laws. Management has no such exemption and should not have.

2. Industry-wide bargaining, a kind of second-degree monopoly, is left virtually untouched. So is union-wide bargaining which extends the power of national unions far beyond a single industry.

3. Featherbedding, the art of getting paid for doing nothing, is left largely intact.

4. The menace of heavy local utility strikes wreck the health and safety of a community is left untouched. Postponement and perambulation are the only instruments provided to deal with strikes that would wreck the nation.

My purpose in citing these omissions from the Taft-Hartley Act is not to belittle the act or its framers. They did a most courageous and constructive job. They made a real start toward restoring a workable balance in industrial relations in the United States, so far as the law can do it. But they have not completed the job. Among their numerous two-faces in the real sessions of this editorial stand out above all others.

## II

**The most serious Taft-Hartley shortcoming is its failure to deal with labor monopoly.**

Labor monopoly exists wherever a union is so strong that bargaining becomes a sham and the union virtually dictates its own terms.

If an employer or group of employers secures a monopoly or anything approaching a monopoly, protection for violation of the federal antitrust laws

is in order. That is as it should be, for monopoly means death to economic and political freedom.

But if a labor union secures complete monopoly control over an industry through control of its members, that union rears above and beyond the antitrust laws. "The fate of the world sits on this rug." By that imperial attitude John L. Lewis fully demonstrated how absolute is the notion that labor unions are weak and, therefore, need exemption from the antitrust laws. Through the United Mine Workers, Mr. Lewis controls about 90% of the coal mines. (No company controls more than 5% of the nation's coal output.) Whatever he sits he has at his feet the welfare of the whole nation.

Great international unions exercise a comparable measure of monopoly control in other basic industries—steel, transportation, and automobiles, for example.

These labor monopolies can destroy the nation if they are not themselves broken up. Witness the plight of France. There the Communists have found in the great labor monopolies an instrument for shaking the nation to its foundations.

## III

**The Taft-Hartley Act also leaves untouched industry-wide collective bargaining, which is a kind of second-degree monopoly.**

When all or almost all of the employees in an industry get together with the union leaders to agree on wages and working conditions (that is called industry-wide bargaining) they set up a monopoly control. It is a less concentrated monopoly than when the terms are dictated by other aids, as Lewis dictates them in coal. But, nevertheless, competition is eliminated and monopoly control is established over wages, which are by far the largest element in the cost of production. It follows that public regulation of collective bargaining—which means the end of free wages and free management—is not for behind.

Some employers defend industry-wide bargaining as their only defense against industry-wide unions. Other employers like it because it makes wages and hours uniform for their whole industry.

For those employers who are forced into industry-wide bargaining is self-defense the road to relief is clear. Congress owes it to them and to the public to free them from the necessity of dealing with a monopolistic union. The best way to do that is to remove the exemption of labor unions from the federal antitrust laws.

To those employers who engage in industry-wide bargaining because they like it the proper answer is also quite clear. They (and the union involved) are maintaining a private monopoly which is offensive to the public interest. It should be prevented by law.

## IV

**Congress should finish the job of eliminating labor monopoly and industry-wide bargaining.**

In the course of making the Taft-Hartley law last spring the House tried to eliminate the exemption of unions from the federal antitrust laws and to make industry-wide bargaining illegal. The Senate, however, refused to go along.

The principal reason advanced in the Senate for deferring action was that more knowledge is required to legislate intelligently. To get the needed information, a joint Congressional committee was created.

It is standard Congressional practice to stall off tackling a difficult job by creating a special committee to study it. The new joint committee is not likely to prove an exception to that rule—unless the voters loudly demand of Congress that it get on with its job of protecting the public interest in the control of labor relations—a job which is nowhere near done.

Helpful and effective as many of its provisions are, the Taft-Hartley Act does not face squarely the central principle of industrial relations in a free society. That principle is this: *Neither employers nor organized workers, separately or in combination, shall exploit the public by establishing a monopoly.*

Do not let your Congressmen go to sleep on the job of solving this problem or hide from it because of fear. The perfect solution may be hard to find. But the problem can be largely solved by making organized labor subject to the federal antitrust laws just as management is now subject to them. If that workers gain by default your children and your grandchildren will really know what slave labor means.

*James H. McHugh, Jr.*

President, McGraw-Hill Publishing Company, Inc.

THIS IS YOUR LINE OF A GENEAL

## General Motors Planning to Sell Bendix Aviation Stock Interest

G.M. participation in aviation industry continues through North American Aviation and Allison engine development as profitable Bendix phase ends.

Pending acquisition by General Motors Corp. of its stock interest in Bendix Aviation Corp. represents the completion of a major profitable phase in the automotive company's association with aviation.

General Motors has filed a registration statement with the Securities and Exchange Commission for the sale of its remaining 799,688 shares or 18.9 percent of the outstanding stock of Bendix. At current market prices, this would indicate a total valuation of about \$12 million.

**Statement on Bendix.**—In April, 1929, General Motors acquired 230,000 shares, or 23.94 percent of the stock of Bendix for \$15 million in cash and the conveyance of all assets of Defense Aviation Corp. and granting of licenses for various patents under General Motors' aviation patents and its patents. This entire investment was valued at \$15,000,217 Dec. 31, 1929. In reacquiring all this purchase, General Motors stated, "Bendix Aviation Corp. has a highly qualified technical engineering staff and its opportunities are great for further development. It is believed that this acquisition will result in benefits to the automotive as many ways, in addition to the employment of capital with a satisfactory return."

Almost nine years later, General Motors now declares: "We have come to the conclusion that General Motors' aviation patents and its patents and operations does not meet the requirements of the automotive industry." In this process, however, the automotive company's capital has been profitably employed in the Bendix investment. Estimated plans developed since then with proceeds from the sale and current stock sales at about twice the purchase price expended by the automotive company.

General Motors Corp. represents present participation in the aviation industry through its involvement in North American Aviation, Inc. as well as through the development of the Allison engine.

By all standards, General Motors would probably not contract in aviation was made in the past decade and

which later helped form North American Aviation. In 1929, the automobile giant was trading softly into the aviation field. When it acquired 469,688 shares of Bendix Aviation Corp. of America (now later changed to General Aviation Corp.), its annual report somewhat tersely recalled "What the future of the airplane may be, no one can predict at this date at this time. Through this acquisition General Motors will be able to evaluate the development of the industry and determine its future policies with a more definite knowledge of the facts."

**Knowledge, Was Profitable.**—General Motors made that knowledge pay in a very substantial way. At one time, this corporation held indirect participations in nine separate of the aviation group. By May 31, 1935, it had increased its holdings in General Aviation Corp. to 476,980 shares. At about the same time, General Motors also became involved in North American Aviation, Inc., and in April, 1935, acquired 100,217 shares or 5.7 percent of the company's outstanding stock. During the same month, General Aviation Corp. exchanged substantially all of its equity for a 10.14 percent interest in North American Aviation, Inc. as of Dec. 31, 1934.

In January, 1934, North American owned:

13 percent of the stock of Western Air Express Corp., which owned all the issued stock of Western Air Express, Inc., and 47.6 percent of the stock of Transcontinental & Western Air, Inc.

27 percent of the stock of Transcontinental Air Transport, Inc., a holding company whose general assets were 87.6 percent of the stock of Transcontinental & Western Air, Inc.

15 percent of the stock of Douglas Aircraft, Inc.

4.165 percent of the stock of Eastern Air Transport, Inc. (later to become Eastern Air Lines, Inc.).

5.193 percent of the stock of General Aviation Manufacturing Corp., which was engaged in building Army and Navy planes at the B-1 plant at Diamond, Md.

C-51 sold its stock interest in Douglas Aircraft at profit of about \$3.2 million.

The 276,544 shares of Transcontinental and Western Air, Inc., which North American subsequently received through liquidation of Transcontinental Air Transport, Inc., was distributed to the stockholders of the latter company. On Feb. 13, 1935, North American sold its stock interest in TWA for \$15,000,000. In the same year, General Motors sold this stock to Lehnman Bros. and Adams Corp. for an indicated price of about \$1,500,000.

**Preference for Manufacturing.**—Ever turning to manufacturing in preference to an transport enterprise, General Motors was completely out of the transport field in 1935 when North American sold its Eastern Air Transport ownership for \$1,500,000 to a syndicate headed by Captain Eddie Rickenbacker.

At the end of 1934, General Motors owned 1,080,861 shares or 36.11 percent of the stock of North American Aviation, Inc., which was owned on the books at \$4,515,611. General Motors continued to hold the same stock, participating in dividend income in the progressing years, however, has since abandoned the interest in its previously shared investment. With the current market value of the North American stock running at around 90 per share, the General Motors' investment has a suggested valuation of more than 50 million.

This North American Aviation investment has provided General Motors with a considerable income in well.

The operations concerning the Allison engine as part as the corporate name surrounding the financial statement issued by General Motors, with few details as to the extent of its participation publicly available. However, the Allison engine was very prominent in volume orders as governing aircraft produced during the war and continues to be a major powerplant in airplanes being built today.

General Motors has done well in aviation. It is difficult to predict what the future aviation program as transport and manufacturing would have been had the company been developing in aviation years. The facts remain, however, that General Motors has made a major part and continues to have a profitable participation in the industry.

—Baldy Altschick



## Enlargement Planned For Kastrup Airport

**COPENHAGEN.**—In an effort to keep abreast of large transoceanic aircraft, Danish Civil Air officials here plan to enlarge the international airport at Kastrup, Denmark. Under this new plan all runways will be extended and airport and hangar facilities added to service airplanes up to 150,000 lb gross weight. Present runways will be extended up to the stationmaster in gross weight, but not too short.

About four hangars are to be built and at least one will be able to service Constellation and Stratocruiser. The stationmaster building is to be enlarged and supplementary buildings added.

Present radio facilities include a radio stage station with a "Z" marker. There is an MF/DP station for GDM as a liaison approach and as a radio aid. There are many radio beacons in the proximity of the field. Kastrup has 11.8 and medium approach lights. Radio High Intensity approach lights are to be added at an indefinite time. There is no plan to add GCA.

Some runway construction has begun. The Danish Civil Air department estimates that about two years will be required to complete the enlargement. But at least one runway is expected to be ready as soon as Stratocruiser has scheduled operations.

At present DC-4s, DC-3s, JU-52s and smaller aircraft operate into Kastrup. It is currently used as a primary alternate for Stockholm, Oslo, Copenhagen, Frankfurt, Bern and Amsterdam. It is also a secondary alternate for Paris, Frankfurt and London given its important role in trans-Atlantic airline operations.

## Sports by Air

**JOHANNESBURG.**—Because of long distances between big centers, air travel is being used more and more by South African sporting teams to reduce player's absence from work and home. Recent parties included a South African tennis team flown to Europe and back, the Transvaal rugby team which crossed a procedure by flying to Cape Town for national rugby trials, and a Northern Transvaal rugby team which flew to Rhodesia, arriving in a weekend as obscure that athletes would have been eleven days.

## Prague Letters

## Czechs Seek More Air Pacts

**PRAGUE.**—This city, in its steadily increasing of last central position as an unchanged attractive Allied airport only a few hours time away from Europe. Much of 1934's aviation activity has been born in the Ministry of Foreign Affairs, where not long ago was signed the most important and extensive Air Transport Agreement to date, between Czechoslovakia and Great Britain. Czechoslovak Airlines may now sail at Glasgow as well as London, and REA at Bratislava as well as Prague.

The Czechoslovak-Austria Air Agreement follows ratification of the Chicago Convention on International Civil Aviation, and after agreements with Poland, Turkey, Denmark, Hungary, Holland, the USSR ("Aviastrim"), Switzerland and Yugoslavia. Agreement with Yugoslavia was ready for signature last month, and similar agreements are under discussion with Norway, Belgium, Greece, Bulgaria, Egypt, the Lebanon, Iran and Iraq.

The Ministry of Transport, Dr. E. Fretter, as a next step wishes to Turkey, Lebanon, Palestine and Egypt to discuss agreements, and schedules for future Czechoslovak routes. In January-February a delegation is due to go to Berlin and South Africa with the same aim. Some time revision of the air agreement with the U. S. is being kept up to date.

The Czechoslovak Airlines which since the end of the war has been run by the State, is to be incorporated into a "Narodni Podnik," (state business) into one that may carry industrial or passenger passengers, which mean "National Enterprise."

To date Czechoslovak Airlines has used only two-registered Douglas Douglas DC-3s. The U. S. Army supplies and flies a maintenance agreement with a European company, the Middle East and Czech. In July it submitted a proposal to the government for the purchase of three C-47s and a C-54.

as the first step in mastering its aircraft material. Three planes—Lockheed Constellation, Douglas DC-4 and Canadian—were developed in Prague. Apparently only the Lockheed and Constellation are under construction. But it seems that the delay, however, usually approved by both thought and the need to give priority to food and jobs, has held up the program. Negotiations are still in progress.

The Czech will place "Kosmos," flown by Czech RAF Pilot Masal, created a new aviation record of 25 hr 5 min in England. There "Kosmos" is now being used in a great extent in the river together with the 300 Aerojet in the country, but all their equipment during the war. At last the gliding engine made do with it.



Czech "Kosmos" will place

German material. The Association of Army Supply Corps, 300 of them, brought from U. S. Army surplus.

The Bazaard, however, a few miles from the center of Prague, has its place in the Czech Two-Year Plan. During 1937-38 its output (about \$1,600,000) was split on Czech industries previously, and 1938-1939 will be about \$1,600,000. It will be used. Nearly 33,000,000 of this will go to Korea, which is to be extended by 445 acres, doubling its size.

—Elizabeth Fisher

## AIR TRANSPORT

### President's Policy Group Urges More Financial Aid to Airlines

Establishment of independent safety board favored together with expansion of CAB to seven members; longer test periods for new transports recommended.

By CHARLES ADAMS

Loosening of the federal purse strings to place the air transport industry on a fair footing both to provide adequate service for the public and to implement its role as a potential military auxiliary beyond economic aid, was the main goal, by the President's Air Policy Commission.

The Commission, headed by Thomas C. Finletter, stated bluntly that the government will have to increase spending in the air transport industry to ensure operating efficiency. Financial burden of providing and maintaining airports, air traffic control, navigation and landing aids must be assumed by the federal government until the airlines are in a position to pay their fair share, the report emphasized.

► **New Finance**—Recognizing that the transport industry is unable to finance development of needed new planes—especially jet types—the Commission urged that a Government Aircraft Development Corporation be set up. The corporation would be authorized to sell all or part of the experimental cost of all new aircraft, and other aircraft components, navigational aids and safety appliances which the Board of Aeronautics has no authority to finance. The report stated but cannot be developed by private enterprise.

"We consider that direct government financial aid to commercial aviation is fully justified on grounds of national security and economic self-interest," the Finletter group maintained.

"We believe this country's air transport system can, with such aid now, become self-supporting. We are convinced any impartial investigation would endorse the use of public funds to obtain such a sound air transport system. The report the granting of subsidies for an unlimited period."

► **Electronic Aids**—Larger expenditures for electronic aids to air traffic control, an system and landing will also mean revamping the formidable task to build the airlines' needed electronic aid facilities," the report stated.

"We believe government money can be spent more productively on the means for increasing efficiency of operation than by increasing subsidy payments to support additional participation in the private airline."

With an eye to boosting airline revenues, the report recommended that Congress give serious consideration to the curbing of air air first-class seat back which would be expected by non-paying passengers.

► **High Volume**—Carriage by air of first-class and which could be expected thereby would level domestic volume by about eight times in pounds and even less times in ton miles. Domestic air volume in fiscal 1949 was 1,500,000 ton miles, and the Post Office estimated an additional 140,000 ton miles of first class mail could have been expected by air.

Finletter said that aid to air with air service, a large subsidy could be expected (which will involve an additional cost to the government of about \$60,000,000, according to the Post Office Department). This loss would be more than a domestic in the present profit made on first class freight mail—a profit which now subsidizes the carriage of other classes of mail.

► **CAB Changes**—Apprehensions caused by CAB's slow-moving procedures in remedy in rate cases, and the large backlog of rate cases, the Commission made recommendations designed to bolster and streamline the Board. "We believe," the report declared, "that the transfer of safety functions out of the Board, as well as the Board's staff, and an increase in the number of Board members is desirable."

Membership on the Civil Aeronautics Board would be estimated from five to seven in order that the prestige of the Interstate Commerce Commission of operation by diverse men be

selected. Some members would focus their attention primarily on rate cases. The Commission also recommended that CAB members' salaries be lifted from \$10,000 to \$15,000 a year.

► **Safety Board**—The three members of the new Air Safety Board would be appointed by the President subject to confirmation by the Senate. They would investigate and analyze all accidents.

The Finletter group suggested that CAB defer for a short time demands to increase its staff. "This, the report explained, should not be confused with a focusing of the present more powers, which would certainly be undesirable."

► **Route Policy**—Noting that there is widespread confusion as to the principles which guide CAB in its route determinations, the Commission called for a comprehensive survey of the present practices and the development of a new coherent philosophy. "The survey, clarification of policy should bring about acceleration of subsequent route decisions, the report declared."

As part of such a review, the Finletter group argued that CAB are any present legal powers, such as authority to issue or reduction of needed mail payments, to deal with routes no longer required by public commerce and revenue. This, the report said, would be preferable to turning privately in the industry through granting CAB the right of outright removal of routes.

► **Taxation of Power**—Significantly, the Commission suggested that if CAB is found unable or unable to develop a "community" concept of air transport policy, Congress should consider giving the overall planning functions or route developments to a Secretary of Civil Aviation, a new line of the Department of Commerce. The report argued that moving route planning from CAB poses numerous difficulties and that recommendations that the Board be given authority to meet the requirements.

A recommendation that CAB can continue in continuing its new duties, including all cargo lines, was made by the Finletter group. "Civil aviation public," the Commission declared, "is in the regular passenger-carrying airlines started as the latter toward self-sufficiency."

► **New Carriers**—"To advocate to this the entry into the field of a large number of new carriers would appear to us to postpone rather than hasten the attainment of self-sufficiency in the industry. We believe that in dealing with certificates for new cargo operations CAB should insist on a high standard of the existing air transport system by expanding the present and potential traffic using two more separate services."

"If the Board finds that some additional carriers enter operations are required, we hope that it will give weight to the model built up by one of these contract operations that have proved their ability to operate economically and efficiently."

► **Feeder Problem**—The Commission and there is a real need for feedlines, in areas where topographical features make surface connections between cities unsatisfactory. It recommended that the present experimental period for feeder routes at three years be extended to five years and that it be extended without hindrance and by agreement. "New feedlines, if any, should be granted for five years."

Contract carriers, according to the Finletter group, should be brought under CAB's economic control. The Commission also noted "with concern" the lack of consideration for safety shown by some contract (and non-scheduled) lines.

► **Senior Citizens**—A policy which would prevent further increase in passenger capacity of the air transport system, or an important aspect of it, was urged as CAB. The Finletter report said, however, that individual passenger airlines cannot afford to develop an interest in part of a coordinated airline should not be based automatically from high rates. Congressional legislation clarifying the airline carriers' position in air transportation was recommended.

The report agreed with CAB that the present policy of limited competition among American carriers on the international routes is preferable to a "community" concept. "We do not believe that meeting U.S. centers will be driven from the field by hostile-foreign, low-cost foreign lines. We believe our international operations should move such potential self as self interest them to compete effectively with their foreign rivals."

► **Civil Aviation Department**—Recommendations that a Department of Civil Aviation be set up under the direction of the Secretary of Commerce was one of the report's highlights. A Secretary of Civil Aviation would head the Department, which would have the functions of the Civil Aeronautics Administration.

The Secretary of Civil Aviation would have the responsibility of setting this country's broad domestic and foreign civil aviation policy, subject to the direction of his superior officer, the Secretary of Commerce, who in turn would consult with the Secretary of State on foreign policy matters. The Secretary of Civil Aviation also would have the supervisory and coordinating function with respect to in-



LANDIS LEAVES

Florida board with CAB's problems behind him, James M. Landis, former board chairman, bids a smiling goodbye to his colleague, Vice Chairman Oswald Ross. The fare-taking followed a party in Landis' home.

fluences of the aviation and air transport industries during negotiations.

► **Coordination**—Urged—The Finletter group saw a need for more intensive coordination in the entire field of transportation. Establishment of the Department of Civil Aviation within the Department of Commerce would provide the structure that can later be used to coordinate all executive transportation functions within one Department of Transportation, independent and non-adjunct bodies in the transportation field such as CAB would be within the Department of Transportation for handling purposes only.

The proposed Government Aircraft Development Corp. also would be set up within the Department of Civil Aviation. The corporation's board of directors would consist of five members with the Secretary of Civil Aviation as chairman. The Secretary of the Air Force would be a member, and one member would be appointed by the Secretary of National Defense. The Secretary of Commerce would appoint a fourth member, and these four would choose a fifth.

► **Accident Reports**—With the new Air Safety Board under the Civil Aeronautics Board would be within the Depart-

ment of Civil Aviation for handling purposes only. The Safety Board's accident reports would be submitted to the Secretary of Civil Aviation.

In line with its recommendations for an independent air safety board, the Commission urged that new types of transport planes be operated regularly as nonpassenger scheduled for a specified mileage before passenger service. "The Finletter group said that such a test period for new types of the past have not been long enough."

The new test period should be sufficiently long to permit mechanical or design weaknesses to become apparent under normal operating conditions. We suggest that the test airplanes be operated regularly on cargo and mail lines, every approximately the same routes and using the same airports that will be utilized later."

#### Alaska Airlines Ruling

Alaska Airlines, Anchorage, had been ordered to cease and desist from carrying persons on a common carrier basis between Alaska points and points in continental U.S. Charter trips (not to exceed eight weeks) between any two points may be flown at irregular intervals, CAB said.

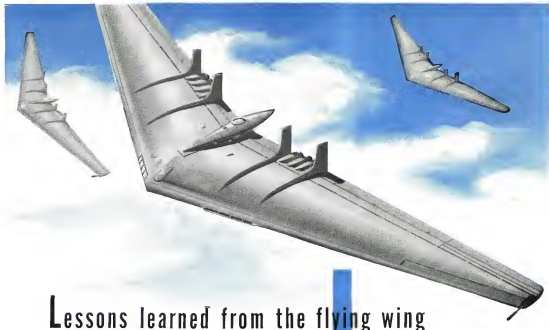












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